



Nature Notes

Zion's Magic Music of the Night

Nighttime is magical. As the sun sets and the heat of the day dissipates in Zion Canyon, shadows creep up red rock canyon walls. A whole new host of creatures awakens for a night of activity. Often we do not see these nocturnal animals, well built for sensing their environment as we sleep, but if we prowl around in search of these fascinating creatures, we can hear them. How do they make the noises they do? What are they saying?

Some noises you will hear will make you feel right at home. Although often overlooked and unappreciated, the field cricket's voice is such a gem. They call all night long, lulling visitors to sleep in the campgrounds most summer nights. Come morning, they are tucked back into their cool crevices. Their evening choirs are an effort to attract female crickets in search of mates, with the best "singer" winning the lady. These stars of the choir would be found in the soprano section, with "voices" that tend to be higher pitched than those of grasshoppers. Crickets may also vocalize to drive off rival males, frighten enemies, or warn others of a predator.

Males create their chorus by a process called stridulation, a term that originates from the Latin "to creak." Simply put, they create sound by rubbing one part of their bodies against another. In this case, they are rubbing their wings together. Running across the underside of each wing is a raised file-like vein, and the upper surface of each wing bears a sharp ridge or scraper. These are drawn across each other, similar to a person playing a violin, producing a unique chirp. Listen for distinctly different songs: a "calling song" to attract a mate, a "love song" to woo her once she is near, and a "rivalry song" to warn off competing suitors. The



Two young Mexican spotted owls viewed in a slot canyon floor. Photo by Caitlin Ceci

most common song consists of a series of triple chirps. Their courtship song, on the other hand, is a continuous trill at the upper limits of audibility for our human ears. Crickets also tend to chirp faster on warmer nights.

Visitors coming to Zion in the wet spring or the end of the summer rainy season will have a good chance of hearing some of our six species of frogs and toads as they sing the nights away, calling in hopes of a female's response. As with crickets, only males sing. Frogs and toads fill their throat pouches with air that they then push past their vocal chords. And what sounds they do make! Canyon tree frogs steal the show, singing together in community choruses in areas like Emerald Pools. Observers have likened their calls to bleating sheep or rivet guns with their explosive series of short notes. The frogs favor these wet, rocky habitats, where they

often are heard and not seen because of their ability to change their skin color to match the rocks around them.

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Another sound that graces our nights during the spring is that of the Mexican spotted owl. Famed for living in old, mossy forests on the West Coast, Zion's Mexican spotted owls nest in our plentiful slot canyons, which provide the cool, moist, and protected habitat they thrive in. Listed as

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What's Roaming in Zion?

Male desert tarantulas (*Aphonopelma eutylenum*) are cruising for mates during the daylight. The males, who may live 10—13 years, only mate once in a lifetime—just before they die. The females, on the other hand, can live up to 25 years and mate every year. They live in burrows in the ground and hunt for insects at night. These spiders are not aggressive. Some people have learned to handle them.

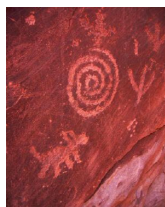
Cliff chipmunk (*Tamias dorsalis*) is fairly common at middle elevations in the park. Unlike other chipmunks in Zion, the typical stripes on the sides are indistinct or absent in this species. Usually shy and retiring, they can become quite tame around campsites and picnic areas.

I'm a Poet: Did you know it?

The examples below are from visitors who completed the self-guided *Junior Ranger Handbook*:

When asked about the meaning of the Southgate Petroglyphs, Kasey Cretors of Scotsdale, Arizona, wrote:

"When the herds of bighorn sheep and deer have to walk the path of storms, the rivers shall meet together and rise."



A brother and sister visiting from New Zealand penned:

| | |
|-------------------|-----------------|
| The big cliffs | Squirrels |
| look spiky. | fluffy |
| They stand still. | collect nuts. |
| I feel so small. | I feel excited. |
| - Emma Westenra | - Jack Westenra |

Alexandra Murphy, a former Zion naturalist, described the beauty of ponderosa pine bark in her book *Graced By Pines*:

"As a ponderosa pine matures, its bark becomes more and more scaly, sloughing off in thin, irregular shapes that fit together like pieces of a jigsaw puzzle. Every piece is a fine sculpture, with delicate curves and smoothly angled edges like beveled glass. Close up, each scale reflects its own palette of color, from pale yellow to burgundy to black. Step back several feet and the bark pieces blend into a golden masterpiece."

Hunting the Huntsman

I'll never forget the events of one warm April night a couple of years back in my first season at Zion National Park. I had just moved in and was getting to know my two roommates. After dinner and a movie, we all retreated to our respective rooms to unpack and relax. Desert living was drying me out, so I went to the kitchen to retrieve a glass of juice. I remember flipping the light switch on and walking toward the refrigerator when something caught my eye. That something was a giant spider descending from the ceiling and now level with my head. Not sure what to do, I called for my roommates, "Erin! Eric!"

Each came running into the common area. "Are either of you good with spiders?" I asked. Erin, a law enforcement ranger used to removing all sorts of species (I thought), jumped onto the nearest chair. Eric had to be the hero but wasn't happy about it. We all got closer to observe the creepy crawler and create a plan of attack. Huge, hairy, and golden, this arachnid was enthralling. "What is it?" they asked me. Looking at all the details, I noticed a pitchfork-like shape on its huge abdomen. I grabbed my camera and snapped a picture. "I don't know, but we're gonna find out," I replied.

I quickly looked up the spider on the Internet. Seconds later I identified our intruder as a golden huntsman. We nicknamed it the devil for the marking on its back. We learned that, although quite intimidating in appearance, the two inch diameter spider known as *Olios fasciculatus* was neither very poisonous nor aggressive. The huntsman only bites if provoked, or if the female is guarding her nest, and leaves a quick healing, superficial wound. Most frequently roaming indoors are the males. Males actually give up feeding and biting to search for females. All huntsman spiders are shy and timid but can move sideways at lightning speed when disturbed. This movement is how they earned the nickname giant crab spider. Instead of bending vertically in relation to the body, their joints are twisted so the legs spread out forwards and laterally in crab-like fashion.

We also learned that this hunter's preferred habitat is under the flaking bark of trees, under rocks, and under building eaves or roofs. They often wander into homes and perch on walls. They are able to live in these places due to their articulated legs, a critical adaptation that allows them to cling easily. They are active hunters. You won't find them in webs waiting for their prey to get caught. They use their eight eyes, situated on various parts of their bodies, and their good vision for the close and distant potential victims. Not posing a threat to humans, the huntsman spider is actually useful since it mainly feeds on insects.

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Deciding to save the wanderer, we captured him within a large glass pitcher and took him outdoors. We found our research was correct concerning the huntsman's speed when we released the creature. But exactly how fast was the spider? We never found out. We all ran in different directions, including the huntsman.

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Golden huntsman spider. Photo by Becca Alfara

Soundscapes

Listen. Does silence make you uncomfortable? Are you soothed by the sound of rushing water and the sighing of wind in the trees? Does a rustling and scurrying in the bushes scare you when you're out in the dark? How about a sudden loud crashing?

To some extent you can choose the sounds you hear by choosing where to live, work, and play. But did you know that Zion National Park can map, manage, and protect its sound environments? They're called soundscapes.

Meet Mike Walsh. He's been hired by the park as a Biological Science Technician to perform acoustic monitoring of the park's soundscapes. Over the past several weeks, he has been setting up sites in backcountry and developed locations to record the surrounding natural and human-made sounds. Analysis of this data can then be used in Zion's Soundscape Management Plan.

I accompanied him one morning in mid-September to observe and assist him set up



Biological Science Technician Mike Walsh sets up monitoring equipment. Photo by Amy Gaiennie

one of these sites. I helped carry equipment up a short sandy embankment then along a cliff edge. The site overlooked Zion's spectacular slick rock country and the Mt. Carmel Highway.

Carefully and systematically, Mike unloaded and set up: solar panels; two tripods attached by ropes to several rocks (so animals or the wind wouldn't knock them down); an anemometer (a piece of shiny black equipment whose top looks like three revolving Mickey Mouse ears) used to measure the wind; a

microphone so sensitive it picks up sounds inaudible to human ears (and somewhat resembles a miniature rocket sitting on a launch pad). Over the microphone, Mike placed a windscreens enclosed in a metal cage used for warding off birds. He hooked the solar panels to the batteries, launched the weather station from his laptop computer, checked the Larson Davis meter—the instrument that collects data by measuring sound frequencies and decibel levels, and calibrated the microphone to ensure it was working properly. He double checked ropes and instruments and taped down any equipment that might flap and make noise.

In the meantime, I was photographing Mike at work and listening to the sounds on the hillside. Mostly, I heard cars, trucks, motorcycles, RVs, and buses rumbling along the Mt. Carmel Highway. Several jets roared overhead. Occasionally, during a lull, a canyon wren whistled. One time, it was so quiet, all I could hear was Mike setting up his equipment. What does this place sound like at night, I wondered. Mike will be collecting data from this site for a month: it will help Zion protect its many natural sounds and manage the unwanted ones.

-Amy Gaiennie



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Thanks to our writers Becca Alfafara,
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On August 1, 1929, the first issue of *Nature Notes* was published. Written and produced by the Education Departments at Zion and Bryce Canyon, its purpose was to provide information to "those interested in the educational opportunities, the natural history, the scientific features or the scenic beauties of this region." Eighty years later, *Nature Notes* continues this tradition by covering subjects pertinent to Zion National Park and its employees.

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As the excitement drew to a close, we knew we had learned much not only about each other but also this fascinating species.

Within my years at Zion, I have seen several more golden huntsman spiders. I've come across them in houses, in visitor centers, and in the outdoors. Often misidentified as a wolf spider, tarantula, or brown recluse, huntsman spiders can be appreciated instead of feared. After all, these spiders can be found around the globe making a meal out of insects that some might consider pests.

-Becca Alfafara

A noiseless, patient spider,
I mark'd, where, on a little promontory, it stood, isolated;
Mark'd how, to explore the vacant, vast surrounding,
It launch'd forth filament, filament,
filament, out of itself;
Ever unreeling them--ever tirelessly speeding them.

-Walt Whitman

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a threatened species, these owls now number around 27 breeding pairs. As with most owls, spotted owls have a dizzying array of sounds they can make when conversing with each other. Some sound like dogs barking or witches cackling. The most commonly heard call is a series of four notes that resound in Zion's slot canyons. Owls will also make warning calls to ward away other owls from their territories.

Here in Zion we are graced with the good fortune to be able to sit quietly, in a protected soundscape, and enjoy the night creatures' choruses. We may never know exactly what they are saying, but we can feel confident they will be around for the generations to come, who will again sit and wonder at Zion's night music.

-Sonja Hartmann

"To go in the dark with a light is to know the light. To know the dark, go dark. Go without sight and find that the dark, too, blooms and sings and is traveled by dark feet and dark wings."

-Wendell Berry